



Product Specification

SPECIFICATION FOR APPROVAL

()	Preliminary Specification
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(◆) Final Specification

Title	15.0" SXGA+ TFT LCD

BUYER	HP
MODEL	

SUPPLIER	LG Display Co., Ltd.	
*MODEL	LP150E06	
Suffix	A3K4	

^{*}When you obtain standard approval, please use the above model name without suffix

SIGNATURE	DATE
Please return 1 copy for your con your signature and comments.	firmation with

APPROVED BY	Signature
K. J. Kwon / G.Manager	
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K. T. Moon / Engineer	
Product Engineering LG Display Co., Ltd	Dept.

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RECORD OF REVISIONS

Revision No	Revision Date	Page	Description	Note
1.0	Jul. 22. 2008	All	Final Specification	
	<u> </u>			
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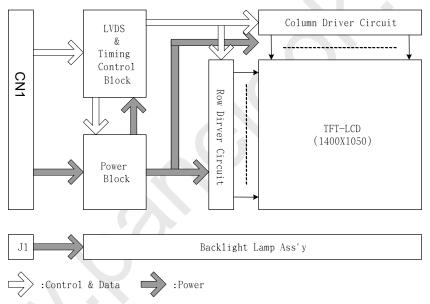
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1. General Description

The LP150E06 is a Color Active Matrix Liquid Crystal Display with an integral Cold Cathode Fluorescent Lamp(CCFL) backlight system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally white mode. This TFT-LCD has 15.0 inches diagonally measured active display area with SXGA+ resolution(1050 vertical by 1400 horizontal pixel array) Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with a 6-bit gray scale signal for each dot, thus, presenting a palette of more than 262,144 colors.

The LP150E06 has been designed to apply the interface method that enables low power, high speed, low EMI.

The LP150E06 is intended to support applications where thin thickness, low power are critical factors and graphic display are important. In combination with the vertical arrangement of the sub-pixels, the LP150E06 characteristics provide an excellent flat display for office automation products such as Notebook PC.



General Features

<u>Ocheral i catares</u>					
Active Screen Size	15.0 inches(38.1cm) diagonal				
Outline Dimension	317.2(H) x 241.4(V), 5.7(D) mm(Typ.)				
Pixel Pitch	0.2175 mm x 0.2175 mm				
Pixel Format	1400 horiz. By 1050 vert. Pixels RGB strip arrangement				
Color Depth	6-bit, 262,144 colors				
Luminance, White	185 cd/m²(Typ.), 5p average				
Power Consumption	Total 4.8 W (Typ.) (1.3W Logic / 3.5W Backlight)				
Weight	520g(Typ.), 535g(Max.)				
Display Operating Mode	Transmissive mode, normally white				
Surface Treatment	Hard coating(3H) Anti-glare treatment of the front polarizer				

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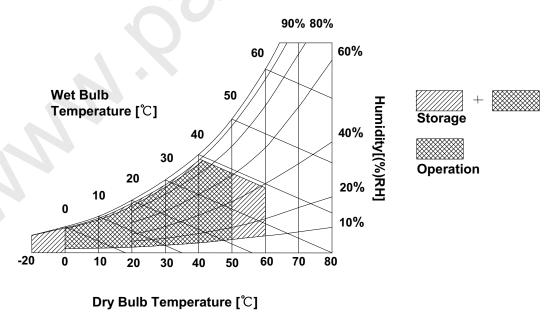
2. Absolute Maximum Ratings

The following are maximum values which, if exceeded, may cause faulty operation or damage to the unit.

Table 1. ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Val	ues	Units	Notes	
Farameter	Symbol	Min	Max	Offics		
Power Input Voltage-ON	VCC	2.7	4.0	Vdc	at 25 ± 5°C	
Power Input Voltage-OFF	GND	-0.3	0.3	Vdc	at 25 ± 5°C	
Operating Temperature	Тор	0	50	°C	1	
Storage Temperature	Тѕт	-20	60	°C	1	
Operating Ambient Humidity	Нор	10	90	%RH	1	
Storage Humidity	Нѕт	10	90	%RH	1	
Electrostatic Durability (ESD)	VESD	± 8	3.0	kV	2	

- Note: 1. Temperature and relative humidity range are shown in the figure below. Wet bulb temperature should be 39°C Max, and no condensation of water.
 - 2. Condition 1) Non-operation, 150 pF-330 Ω , 25 °C , 40~60%RH
 - 2) I/F Connector pins are subjected.
 - 3) The surface of Metal bezel and LCD are subjected except interface connector.(LCD side)
 - 4) Discharge interval time 1sec, 10 times each place



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3. Electrical Specifications

3-1. Electrical Characteristics

The LP150E06 requires two power inputs. One is employed to power the LCD electronics and to drive the TFT array and liquid crystal. The second input which powers the CCFL, is typically generated by an inverter. The inverter is an external unit to the LCD.

Table 2. ELECTRICAL CHARACTERISTICS

Parameter	Symbol		Unit	Notes		
i arameter	Symbol	Min	Тур	Max	Offic	140163
MODULE :						
Power Supply Input Voltage	VCC	3.0	3.3	3.6	Vdc	
Power Supply Input Current	I _{cc}	-	385	443	mA	1
Power Consumption	Pc	-	1.30	1.60	Watt	1
Differential Impedance	Zm	90	100	110	ohm	2
	1					
	[
LAMP :	1					
Operating Voltage	V _{BL}	630	665	860	V _{RMS}	3
Operating Current	I _{BL}	2.0	5.0	6.8	mA _{RMS}	
Established Starting Voltage	Vs					4
at 25 °C		-	-	1165	V _{RMS}	
at 0 °C		-	-	1400	V _{RMS}	
Operating Frequency	f _{BL}	50	65	80	kHz	5
Discharge Stabilization Time	Ts	-	-	3	Min	6
Power Consumption	P _{BL}	-	3.5	4.4	Watt	7
Life Time		10,000	-	-	Hrs	8

Note: The design of the inverter must have specifications for the lamp in LCD Assembly.

The performance of the Lamp in LCM, for example life time or brightness, is extremely influenced by the characteristics of the DC-AC inverter. So all the parameters of an inverter should be carefully designed so as not to produce too much leakage current from high-voltage output of the inverter. When you design or order the inverter, please make sure unwanted lighting caused by the mismatch of the lamp and the inverter(no lighting, flicker, etc) never occurs. When you confirm it, the LCD – Assembly should be operated in the same condition as installed in you instrument.

- 1. The specified current and power consumption are under the VCC=3.3V, 25° C, f_V =60Hz condition whereas Mosaic pattern is displayed and f_V is the frame frequency.
- 2. This impedance value is needed to proper display and measured from LVDS T_X to the mating connector.
- 3. The variance of the voltage is \pm 10%.
- 4. FOS, and reliability test condition is at 6.0mA
- 5. The voltage above V_S should be applied to the lamps for more than 1 second for start-up.

 Otherwise, the lamps may not be turned on. The used lamp current is the lamp typical current.

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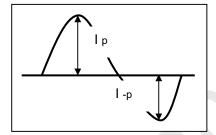


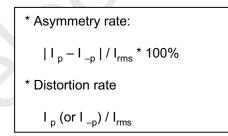
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- 6. The output of the inverter must have symmetrical(negative and positive) voltage waveform and symmetrical current waveform.(Unsymmetrical ratio is less than 10%) Please do not use the inverter which has unsymmetrical voltage and unsymmetrical current and spike wave.
 Lamp frequency may produce interface with horizontal synchronous frequency and as a result this may cause beat on the display. Therefore lamp frequency shall be as away possible from the horizontal synchronous frequency and from its harmonics in order to prevent interference.
- Let's define the brightness of the lamp after being lighted for 5 minutes as 100%.
 T_S is the time required for the brightness of the center of the lamp to be not less than 95%.
- The lamp power consumption shown above does not include loss of external inverter.The used lamp current is the lamp typical current.
- 9. The life is determined as the time at which brightness of the lamp is 50% compared to that of initial value at the maximum lamp current($6.0 \mathrm{mA}_{\mathrm{RMS}}$) on condition of continuous operating at 25 \pm 2°C
- 10. Requirements for a system inverter design, which is intended to have a better display performance, a better power efficiency and a more reliable lamp, are following.

It shall help increase the lamp lifetime and reduce leakage current.

- a. The asymmetry rate of the inverter waveform should be less than 10%.
- b. The distortion rate of the waveform should be within $\sqrt{2} \pm 10\%$.
- * Inverter output waveform had better be more similar to ideal sine wave.





Do not attach a conducting tape to lamp connecting wire.
If the lamp wire attach to a conducting tape, TFT-LCD Module has a low luminance and the inverter has abnormal action. Because leakage current is occurred between lamp wire and conducting tape.





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3-2. Interface Connections

The interface connections are compatible with ISP (Industry Standard Panels) 15.0" Mounting and Top Level Interface Requirements (Version2, June,2000) defined by SPWG (Standard Panels Working Group). This LCD employs two interface connections, a 30 pin connector is used for the module electronics and the other connector is used for the integral backlight system.

The electronics interface connector is a model GT101-30S-HR11 manufactured by LG Cable. The pin configuration for the connector is shown in the table below.

Table 3. MODULE CONNECTOR PIN CONFIGURATION (CN1)

	Table 3. MODULE CONNECTOR FIN CONTIGURATION (CNT)								
Pin	Symbol	Description	Notes						
1	VSS	Ground							
2	VCC	Power Supply, 3.3V Typ.	(II.) /DO T						
3	VCC	Power Supply, 3.3V Typ.	[LVDS Transmitter]						
<u>,</u>	VEDID	DDC 3.3V power	Thine, THC63LVDF823A or equivalent						
4	NC	No Connection							
5	Clkedid	DDC Clock	[LVDS Receiver]						
6			Thine, THC63LVDF824A						
7	DATAEDID	DDC Data	Timio, incochibi oz iri						
. 8	Odd_R _{IN} 0-	-LVDS differential data (odd pixels R0-R5, G0)	[0						
9	Odd_R _{IN} 0+	+LVDS differential data (odd pixels R0-R5, G0)	[Connector]						
.10	VSS	Ground	LCD : GT101-30S-HR11, LG Cable						
11.	Odd_R _{IN} 1-	-LVDS differential data (odd pixels G1-G5, B0-B1)	* JAE FI-XB30Sx-HFxx or						
12 13	Odd_R _{IN} 1+	+LVDS differential data (odd pixels G1-G5, B0-B1)	JAE FI-XB30S-HF or equivalent.						
13	VSS	Ground	Matching : JAE FI-X30M or						
14	Odd_R _{IN} 2-	-LVDS differential data (odd pixels B2-B5, HS, VS, DE)	equivalent						
15	Odd_R _{IN} 2+	+LVDS differential data (odd pixels B2-B5, HS, VS, DE)	oquivalent						
16	VSS	Ground							
17	Odd_Clk _{IN} -	-LVDS differential clock (odd pixels)	[Commontor win arrangement]						
18	Odd_Clk _{IN} +	+LVDS differential clock(odd pixels)	[Connector pin arrangement]						
19	VSS	Ground	30 1						
20	Even_R _{IN} 0-	-LVDS differential data (even pixels R0-R5, G0)							
21	Even_R _{IN} 0+	+LVDS differential data (even pixels R0-R5, G0)							
22	VSS	Ground							
21 22 23	Even_R _{IN} 1-	-LVDS differential data (even pixels G1-G5, B0-B1)	LCD rear view						
24	Even_R _{IN} 1+	+LVDS differential data (even pixels G1-G5, B0-B1)							
1. 5. 7 25	VSS	Ground							
. 25 26		-LVDS differential data (even pixels B2-B5, HS, VS, DE)							
27	Even R _N 2+	+LVDS differential data (even pixels B2-B5, HS, VS, DE)							
28	VSS	Ground							
29	Even_Clk _{IN} -	-LVDS differential clock (even pixels)							
<u>29</u> 30	Even_Clk _{IN} +	+LVDS differential clock (even pixels)							
30	FACITOWN.	TEVDS differential clock (even pixels)							

Note: All GND(ground) pins should be connected together and to GND which should also be connected to the LCD's metal frame. All VCC (power input) pins should be connected together.

The backlight interface connector is a model BHSR-02VS-1, manufactured by JST or Compatible. The mating connector part number is SM02B-BHSS-1 or equivalent.

Table 4. BACKLIGHT CONNECTOR PIN CONFIGURATION (J1)

Pin	Symbol	Description	Notes
1	HV	Power supply for lamp (High voltage side)	1
2	LV	Power supply for lamp (Low voltage side)	1

Notes: 1. The high voltage side terminal is colored pink and the low voltage side terminal is yellow

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3-3. Signal Timing Specifications

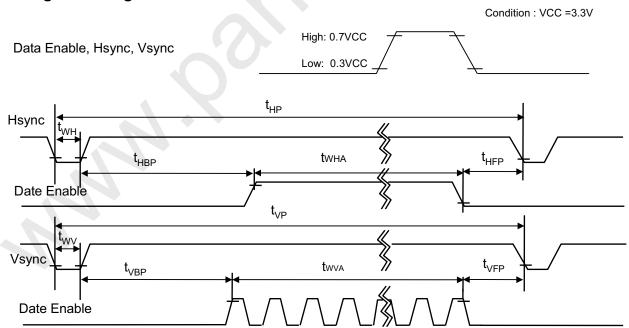
This is the signal timing required at the input of the User connector. All of the interface signal timing should be satisfied with the following specifications and specifications of LVDS Tx/Rx for it's proper operation.

Table 5. TIMING TABLE

ITEM	Symbol		Min	Тур	Max	Unit	Note
DCLK	Frequency	fclk	53.5	54	54.5	MHz	
Hsync	Period	tHP	732	800	848	tour	
	Width	twн	8	-	-	tclk	
Vsync	Period	tvp	1060	1125	1150	1110	
	Width	tw∨	2	-	-	tHP	
Data	Horizontal back porch	tHBP	8	-	1-	tour	
Enable	Horizontal front porch	tHFP	8	-		tclk	
	Vertical back porch	tvbp	3	-	-	tup	
	Vertical front porch	tvfp	2	-	-	tHP	

DCLK: Dual Port Operating

3-4. Signal Timing Waveforms



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3-5. Color Input Data Reference

The brightness of each primary color (red,green and blue) is based on the 6-bit gray scale data input for the color; the higher the binary input, the brighter the color. The table below provides a reference for color versus data input.

Table 6. COLOR DATA REFERENCE

									Inp	out Co	olor D	ata							
	Color			RE	ED					GRE	EN					BL	UE		
	30.0.	MSI	3				LSB	MSE	3				LSB		3				LSB
	•	R 5	R 4	R 3	R 2	R 1	R 0	G 5	G 4	G 3	G 2	G 1	G 0	B 5	B 4	В3	B 2	B 1	B 0
	Black	0	0	0		0	0	0	0		0	0	0	0	0	0		0	0
	Red	1					1	0	0		0	0	0	0	0	0	0	0	0
	Green	0	0	0	0	0	0	1	1	1	1	1		0	0	0	0	0	0
Basic	Blue	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Color	Cyan	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	Magenta	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
	Yellow	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	RED (00)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (01)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
RED																			
	RED (62)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (00)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (01)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
GREEN																			
	GREEN (62)	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	GREEN (63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
	BLUE (00)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BLUE (01)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BLUE		l · · · ·			 												 		
	BLUE (62)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
	BLUE (63)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1

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3-6. Power Sequence

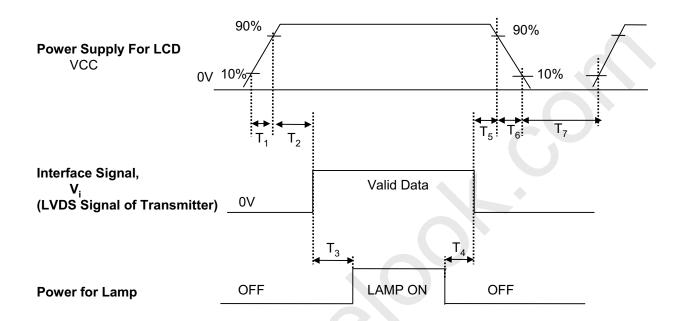


Table 7. POWER SEQUENCE TABLE

Parameter		Value		Units
	Min.	Тур.	Max.	
T ₁	_	-	10	(ms)
T ₂	0	-	50	(ms)
T ₃	200	-	-	(ms)
T ₄	200	-	-	(ms)
T ₅	0	-	50	(ms)
T ₆	0	-	100	(ms)
T ₇	400	-	-	(ms)

Notes: 1. Please avoid floating state of interface signal at invalid period.

- 2. When the interface signal is invalid, be sure to pull down the power supply for LCD VCC to 0V.
- 3. Lamp power must be turn on after power supply for LCD and interface signal are valid.



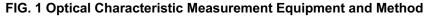


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4. Optical Specification

Optical characteristics are determined after the unit has been 'ON' and stable for approximately 30 minutes in a dark environment at 25°C. The values specified are at an approximate distance 50cm from the LCD surface at a viewing angle of Φ and Θ equal to 0° .

FIG. 1 presents additional information concerning the measurement equipment and method.



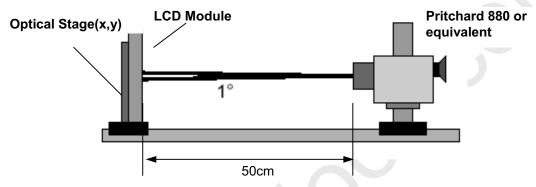


Table 8. OPTICAL CHARACTERISTICS

Ta=25 $^{\circ}$ C, VCC=3.3V, fv=60Hz Dclk= 54MHz, I_{BL}= 6.0mA

					1	T
Parameter	Symbol		Values		Units	Notes
1 didifictor	Cymbol	Min	Тур	Max	Office	140103
Contrast Ratio	CR	150	300	<u> </u>		1
Surface Luminance, white (5P, Ave)	L _{WH}	150	185	 	cd/m ²	2
Luminance Variation	δ_{WHITE}	-	l .	1.85		3
Response Time		P				4
: Rise Time	Tr _R	-	10	20	ms	
: Decay Time	Tr_D	-	20	30	ms	
Color Coordinates						PR650 or equivalent
: RED	RX	0.560	0.590	0.620		
	RY	0.313	0.343	0.373		
GREEN	GX	0.290	0.320	0.350		
	GY	0.510	0.540	0.570		
BLUE	ВХ	0.125	0.155	0.185		
	BY	0.103	0.133	0.163	1	
WHITE	WX	0.283	0.313	0.343	1	
	WY	0.299	0.329	0.359	1	
Viewing Angle					1	5
x axis, right(Φ=0°)	Θr	55	60	-	degree	
: x axis, left (Φ=180°)	Θl	55	60	-	degree	
y axis, up (Φ=90°)	Θu	40	45	-	degree	
y axis, down (Φ=270°)	Θd	40	45	-	degree	
Gray Scale						6

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Notes 1. Contrast Ratio(CR) is defined mathematically as:

Surface Luminance with all white pixels

Contrast Ratio =

Surface Luminance with all black pixels

- 2. Surface luminance is the average of 5 points across the LCD surface 50cm from the surface with all pixels displaying white. For more information see FIG 1., When I_{BL} =6.0mA.
- 3. The variation in surface luminance , The Panel total variation (δ_{WHITE}) is determined by measuring L_{ON} at each test position 1 through 13, and then dividing the maximum L_{ON} of 13 points luminance by minimum L_{ON} of 13 points luminance. For more information see FIG 2.

$$\delta_{\text{ WHITE}}$$
 = Maximum(L₁,L₂, ... L₁₃) / Minimum(L₁,L₂, ... L₁₃)

- 4. Response time is the time required for the display to transition from white to black(RiseTime, Tr_R) and from black to white(Decay Time, Tr_D). For additional information see FIG 3.
- 5. Viewing angle is the angle at which the contrast ratio is greater than 10. The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface. For more information see FIG 4.

6. Gray scale specification

* f_V=60Hz

Gray Level	Luminance [%] (Typ)
LO	0.33
L7	0.83
L15	3.93
L23	9.50
L31	19.0
L39	31.0
L47	48.0
L55	75.0
L63	100.0



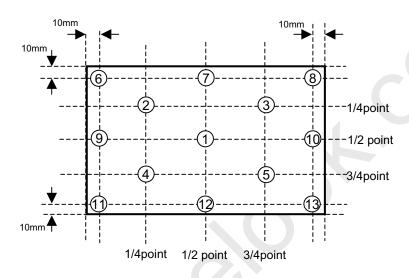
Global LCD Panel Exchange Center

LP150E06 Liquid Crystal Display

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FIG. 2 Luminance

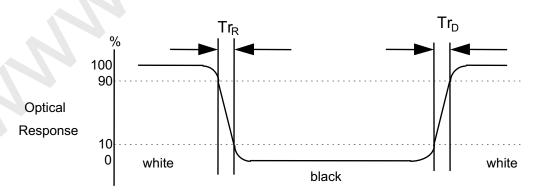
<measuring point for surface luminance & measuring point for luminance variation>



Active area

FIG. 3 Response Time

The response time is defined as the following figure and shall be measured by switching the input signal for "black" and "white".



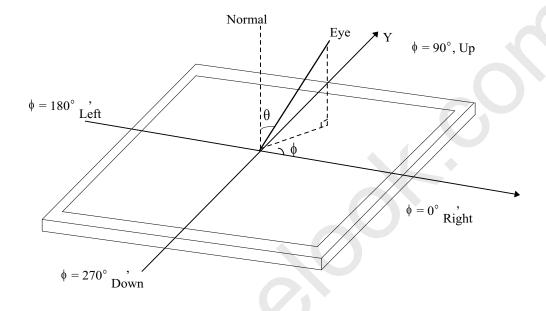
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FIG. 4 Viewing angle

<Dimension of viewing angle range>







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5. Mechanical Characteristics

The contents provide general mechanical characteristics for the model LP150E06. In addition the figures in the next page are detailed mechanical drawing of the LCD.

	Horizontal	317.2 ± 0.5mm		
Outline Dimension	Vertical	241.4 ± 0.5mm		
	Depth	5.7 mm(Typ.) 6.0mm(Max.)		
Bezel Area	Horizontal	307.5 ± 0.5mm		
bezei Area	Vertical	231.4 ± 0.5mm		
Active Dieplay Area	Horizontal	304.500 mm		
Active Display Area	Vertical	228.375 mm		
Weight	520g(Typ.), 535g(Max.)			
Surface Treatment	Hard coating(3H) Anti-glare treatment of the front p	polarizer (Haze 25%)		

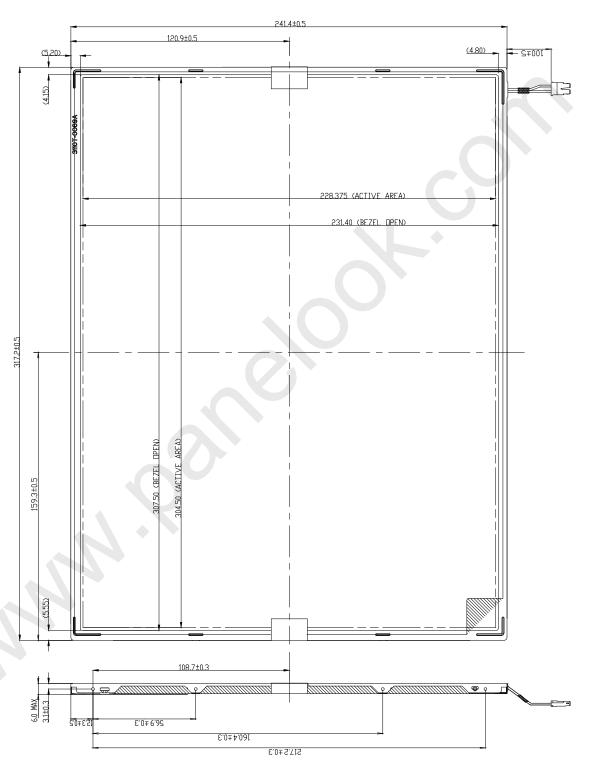
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<FRONT VIEW>



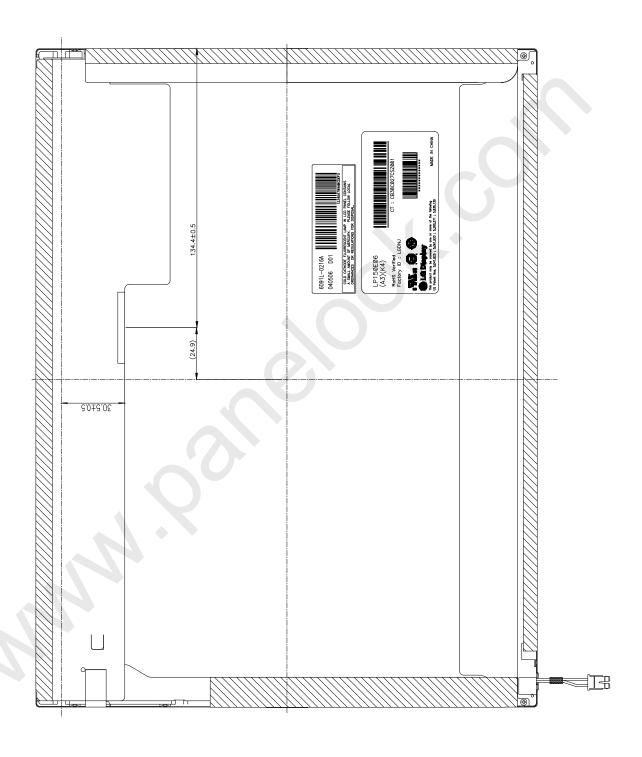
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Product Specification

<REAR VIEW>



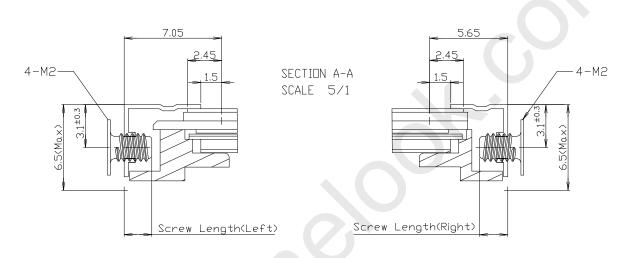
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Product Specification

[DETAIL DESCRIPTION OF SIDE MOUNTING SCREW]



- * Screw Length : Left and Right (Max : 2.5, Min : 2.0)
- * Screw Torque : Max 2.0kgf cm

Notes: 1. Screw plated through the method of non-electrolytic nickel plating is preferred to reduce possibility that results in vertical and/or horizontal line defect due to the conductive particles from screw surface.

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Product Specification

6. Reliability

Environment test condition

No.	Test Item	Conditions
1	High temperature storage test	Ta= 60°C, 240h
2	Low temperature storage test	Ta= -20°C, 240h
3	High temperature operation test	Ta= 50°C, 50%RH, 240h
4	Low temperature operation test	Ta= 0°C, 240h
5	Vibration test (non-operating)	Sine wave, 10 ~ 500 ~ 10Hz, 1.5G, 0.37oct/min 3 axis, 1hour/axis
6	Shock test (non-operating)	Half sine wave, 180G, 2ms one shock of each six faces(I.e. run 180G 2ms for all six faces)
7	Altitude operating storage / shipment	0 ~ 10,000 feet (3,048m) 24Hr 0 ~ 40,000 feet (12,192m) 24Hr

[{] Result Evaluation Criteria }

There should be no change which might affect the practical display function when the display quality test is conducted under normal operating condition.





Product Specification

7. International Standards

7-1. Safety

a) UL 60950, Third Edition, Underwriters Laboratories, Inc., Dated Dec. 11, 2000.

Standard for Safety of Information Technology Equipment, Including Electrical Business Equipment.

b) CAN/CSA C22.2, No. 60950, Third Edition, Canadian Standards Association, Dec. 1, 2000.

Standard for Safety of Information Technology Equipment, Including Electrical Business Equipment.

c) EN 60950 : 2000, Third Edition

IEC 60950 : 1999, Third Edition

European Committee for Electro-technical Standardization(CENELEC)

EUROPEAN STANDARD for Safety of Information Technology Equipment Including Electrical Business Equipment.

7-2. EMC

- a) ANSI C63.4 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electrical Equipment in the Range of 9kHZ to 40GHz. "American National Standards Institute(ANSI), 1992
- b) C.I.S.P.R "Limits and Methods of Measurement of Radio Interface Characteristics of Information Technology Equipment." International Special Committee on Radio Interference.
- c) EN 55022 "Limits and Methods of Measurement of Radio Interface Characteristics of Information Technology Equipment." European Committee for Electro-technical Standardization.(CENELEC), 1998 (Including A1: 2000)

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Product Specification

8. Packing

8-1. Designation of Lot Mark

a) Lot Mark

A B C D E F	GHI	JK	LM
-------------	-----	----	----

 $A,B,C: SIZE(INCH) \\ D: YEAR$

E: MONTH $F \sim M$: SERIAL NO.

Note

1. YEAR

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Mark	1	2	3	4	5	6	7	8	9	0

2. MONTH

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mark	1	2	3	4	5	6	7	8	9	Α	В	С

b) Location of Lot Mark

Serial No. is printed on the label. The label is attached to the backside of the LCD module. This is subject to change without prior notice.

8-2. Packing Form

a) Package quantity in one box : 30 pcs b) Box Size :482mm \times 371mm \times 325mm





Product Specification

9. PRECAUTIONS

Please pay attention to the followings when you use this TFT LCD module.

9-1. MOUNTING PRECAUTIONS

- (1) You must mount a module using holes arranged in four corners or four sides.
- (2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
- (3) Please attach the surface transparent protective plate to the surface in order to protect the polarizer. Transparent protective plate should have sufficient strength in order to the resist external force.
- (4) You should adopt radiation structure to satisfy the temperature specification.
- (5) Acetic acid type and chlorine type materials for the cover case are not desirable because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.
- (6) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.
 Do not touch the surface of polarizer for bare hand or greasy cloth.(Some cosmetics are detrimental to the polarizer.)
- (7) When the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with petroleum benzene. Normal-hexane is recommended for cleaning the adhesives used to attach front / rear polarizers. Do not use acetone, toluene and alcohol because they cause chemical damage to the polarizer.
- (8) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
- (9) Do not open the case because inside circuits do not have sufficient strength.

9-2. OPERATING PRECAUTIONS

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage : $V=\pm\ 200mV(Over\ and\ under\ shoot\ voltage)$
- (2) Response time depends on the temperature.(In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time(required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimized the interference.

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Product Specification

9-3. ELECTROSTATIC DISCHARGE CONTROL

Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wrist band etc. And don't touch interface pin directly.

9-4. PRECAUTIONS FOR STRONG LIGHT EXPOSURE

Strong light exposure causes degradation of polarizer and color filter.

9-5. STORAGE

When storing modules as spares for a long time, the following precautions are necessary.

- (1) Store them in a dark place. Do not expose the module to sunlight or fluorescent light. Keep the temperature between 5°C and 35°C at normal humidity.
- (2) The polarizer surface should not come in contact with any other object.

 It is recommended that they be stored in the container in which they were shipped.

9-6. HANDLING PRECAUTIONS FOR PROTECTION FILM

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

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Product Specification

APPENDIX [A] - Enhanced Extended Display Identification Data (EEDID™)

Byte#	Byte#		Val	ue	Value	
(decimal)	(HEX)	Field Name and Comments	(HE	_	(binary)	
0	` ′	Header	0		00000000	
1	01	neddor	_	F	11111111	
2	02		_	F	11111111	
3	03		F	F	11111111	Header
4	04		F	F	11111111	
5	05		F	F	11111111	
6	06		F	F	11111111	
7	07		0	0	00000000	
8	08	E SA manufacturer code = LGP	3	0	00110000	
9	09		F	0	11110000	
10	0A	Productcode	5	3	01010011	
11	OB	(Hex, LSB first)	1	1	00010001	
12	OC.	D (32-bit) seria1num ber = don'tcare	0	0	00000000	V ender/
13	OD		0	0	00000000	Product ID
14	0E		0	0	00000000	
15	0F		0	0	00000000	
16	10	W eek ofmanufacture = don't care	0	0	00000000	
17	11	Yearofmanufacture = don'tcare	0	0	00000000	
18	12	ED D Structure version # = 1	0	1	00000001	EDID Version/
19	13	ED D Revision # = 2	0	2	00000010	Revision
20	14	Video inputdefinition = Digita1√p,non TM DS CRGB	8	0	10000000	
21	15	M ax H image size(cm)= 30.45cm(30)	_	Е	00011110	D is p la y
22	16	Max V image size(cm)= 22.8375cm(23)	1	7	00010111	Parameter
23	17	Display gamma = 2.2	7	8	01111000	
24	18	Feature support(DPMS) = Active off, RGB Color	0	A	00001010	
25	19	Red/Green low Bits	3	C	00111100	
26	1A	Blue/W hite Low Bits	8	0	10000000	
27 28	1B 1C	Red X Rx = 0.590 Red Y Ry = 0.343	9 5	7	10010111 01010111	
29	1D	G reen X G x = 0.320	5	1	01010111	Color
30	1E	G reen Y G y = 0.540	8	A	10001010	C haracteristic
31	1F	B lue X Bx = 0.155	2	7	00100111	o nata o will all
32	20	B Lue Y By = 0.133	2	2	00100010	
33	21	W hite X $Wx = 0.313$	5	0	01010000	
34	22	W hite Y W y = 0.329	5	4	01010100	
35	23	Established Timing I	0	0	00000000	Established
36	24	Established Timing II	0	0	00000000	Tim ings
37	25	M anufacturer's Tim ings	0	0	00000000	
38	26	Standard Timing Identification 1 was not used	0	1	00000001	
39	27	Standard Timing Identification 1 was not used	0	1	00000001	
40	28	Standard Timing Identification 2 was not used	0	1	00000001	
41	29	Standard Timing Identification 2 was not used	0	1	00000001	
42	2A	Standard Timing Identification 3 was not used	0	1	00000001	
43	2B	Standard Timing Identification 3 was not used	0	1	00000001	
44	2C	Standard Timing Identification 4 was notused	0	1	00000001	Standard
45	2D	Standard Timing Identification 4 was notused	0	1	00000001	Tim ing ID
46	2E	Standard Timing Identification 5 was notused	0	1	00000001	-
47	2F	Standard Timing Identification 5 was not used	0	1	00000001	
48	30	Standard Timing Identification 6 was not used	0	1	00000001	
49	31	Standard Timing Identification 6 was not used	0	1	00000001	
50	32	Standard Timing Identification 7 was not used	0	1	00000001	
	33	Standard Timing Identification 7 was notused	0	1	00000001	
51					0000001	
51 52	34	Standard Timing Identification 8 was not used	0	1	00000001	

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Product Specification

Byte#	D vrtn#		V a	lue	Value	
	Byte#	Field Name and Comments				
(decimal)				EX)	(binary)	
54		Detailed Timing Descriptor#1		0	00110000	
55		1400 x1050@ 60Hz mode : pixe1clock = 108MHz	2	Α	00101010	
56	38	HorizontalActive = 1400 pixels	7	8	01111000	
57	39	HorizontalBlanking = 288 pixels	2	0	00100000	
58		HorizontalActive: HorizontalBlanking	5	1	01010001	
59	3B	Vertical Avtive = 1050 lines	1	A	00011010	
60		Vertical Blanking = 16 lines	1	0	00010000	D e ta ile d
61		Vertical Active: Vertical Blanking	4	0	01000000	Tim ing
62			2	0	001000000	
		HorizontalSync.Offset=32 pixels		_		Description
63		HorizontalSync Pulse Width = 112 pixels	7	0	01110000	#1
64		VerticalSync Offset= 2 lines,Sync W idth = 4 lines	2	4	00100100	
65		HorizontalVertical Sync Offset√Width upper 2bits	0	0	00000000	
66		Horizontal Image Size = 304.5mm(305)	3	1	00110001	
67		Vertical Image Size = 228.375mm(228)	Е	4	11100100	
68	44	Horizon tal & Vertical Image Size	1	0	00010000	
69	45	HorizontalBorder=0	0	0	00000000	
70		VerticalBorder= 0	0	0	00000000	
71		Non—in terlaced ,Norm ald isplay,no stereo,D ig ital separate sync,H/V polnegatives	1	8	00011000	
72		Detailed Timing Descriptor#2	0	0	00000000	
	48	new πeα τπι πιβ nescrih ωτ μς	0	0	00000000	l l
73						l l
74	4A		0	0	00000000	ļ l
75	4B		0	0	00000000	l
76	4C		0	0	00000000	Į J
77	4D		0	0	00000000	
78	4E		0	0	00000000	D e ta ile d
79	4F		0	0	00000000	Tim ing
80	50		0	0	00000000	Description
81	51		0	0	00000000	#2
82	52		0	0	00000000]
83	53		0	0	00000000	1
84	55		0	0	00000000	1 I
85	55		0	0	00000000	l l
86	56		0	0	00000000	
87	57		0	0	00000000	
88	58		0	0	00000000	
89	59		0	0	00000000	
90		Detailed Timing Descriptor#3	0	0	00000000	
91	5B		0	0	00000000	
92	5C	ACCIID to Chris To (Constitution No. 1)	0	0	00000000	
93	5D	ASC II Data String Tag (Supplier Name)	F	Е	111111110	
94	5E		0	0	00000000	
95	5F	L	4	Č	01001100	
96	60	G	4	7	01000111	Detailed
97	61	P	5	0	01010000	Tim ing
98	62	h	6	8	011010000	Description
99	63		6	9	01101000	#3
		i		_		#3
100	64	1	6	С	01101100	
101	65	i	6	9	01101001	
102	66	p	7	0	01110000	Į l
103	67	S	7	3	01110011	Į l
104	68	L	4	С	01001100	Į l
105	69	C	4	3	01000011]
106	6A	D	4	4	01000100	
107	6B	LF (Line Feed)	0	Α	00001010	
108	6C	Detailed Timing Descriptor#4	0	0	00000000	
109	6D		0	0	00000000	1
			_	Ė		l l
110	6E	ASCIIData String Tag (Supplier S/N)	0	0	00000000	
111	6F		F	Е	111111110]
112	70		0	0	00000000]
113	71	L	4	Č	01001100	1
				Ė	01001100	Dotn:1- d
114	72	P	5	0		D e ta ile d
115	73	1	3	1	00110001	Tim ing
116	74	5	3	5	00110101	Description
117	75	0	3	0	00110000	#4
				_		"* <u> </u>
118	76	E	4	5	01000101	l l
119	77	0	3	0	00110000	
120	78	6	3	6	00110110	
121	79	-	2	D	00101101	l l
				_		l l
122	7A	A	4	1	01000001	J
123	7B	3	3	3	00110011	
124	7C	K	4	В	01001011	
125	7D	2	3	2	00110010	į l
		_	_	_		
126		Extension flag = 00	0	0	00000000	Extension Flag
127	7F	Checksum	Е	8	11101000	Checksum

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SGS Testing Korea Co., Ltd.

#18-34, Sanbor-dong, Gunpo-city, Kyunggi-do, Korea 435-840 Tel : 031) 428-5765-6, Fax: 031) 427-2374, InterNets-http://www.sgslab.co.kr

Test Report No. F690101/LF-CTS027670 Date: December 20, 2004 Page 1 of 8

LG PHILIPS LCD. 642-3, Jinpyung-dong, Kumi-city, Kyungbuk, Korea

The following merchandise was submitted and identified by the client as : -

Type of Product

Thirteen samples of LP150 E06

SGS File No.

K-49/2004-0019/1

Remark

Please refer to next page's item name.

Sample Receiving Date

Dec. 08, 2004

Test Performing Date

Dec. 09, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test Results

For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

ac S. Han

Jason Han / Director

KHJ/ssp

SGS Testing Korea Co., Ltd. #18-34, Sanbor-dong, Gunpo-etty, Kyunggi-do, Korea 435-040 Tel: 031] 428-5765-6, Facc 031) 427-2374, Inter National Williams signature.

Test Report No. F690101/LF-CT-S027570 Date: December 20, 2004 Paga 2 of 0

LP1	50E06	
NO.	ITEM NAME	BOM NO.
1	CASE TOP	3110T-0069A
2	COVER SHIELD	35508-0136A
2	COVER BOTTOM	3550B-0069A
4	PCB CONTROL	6871L-0543C
5	TGP SOURCE	DWHYL-006BA
6	TCP GATE	010KL-0033A
7	GLASS	4890L-0025A
B	DIFFUSER	3022L-0225B
9	PRISM	3032L-0172A
10	LIGHT GUIDE	5150L-0106A
11	SUPPORTER MAIN	4990L-0217A
12	REFLECTOR	3034L-0161A
13	LAMP	6912L-0126C

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Heavy Metal

				Result
Test Item	Unit	Test Method	D.L.	(1)
Cadmium (Cd)	me/kg	USEPA 3050B, ICP-AES	0.5	n. d
Lead (Pb)	me kg	USEPA 3050B, ICP-AES	5	n. d
Mercury (Hg)	me kg	USEPA 3052, ICP-AES	0.5	n. d
Hexavalent Chromium (Cr V	I) mg/kg	USEPA 3060A, UV-vis	0.16	n. d

		ingan a databa asa sal		Result
Test Item	Unit	Test Method	D.I.,	(2)
Cadmium (Cd)	mg/kg	EN1122, ICP-AES	0.5	n. d
Lead (Pb)	mę/kg	USEPA 3050B, ICP-AES	5	n. d
Mercury (Hg)	me/kg	USEIN 3052, ICP-AES	0.5	n. d
Hexavalent Chromium (Cr V	I) mg/kg	USEPA 3060A, UV-vis	0.16	n.d

T T	17114	Unit Test Method		Result				
Test Item	CRAL	test Miethod	D.I.	(3)	(4)	(5)		
Cadmium (Cd)	mg/kg	USEPA 3050B, ICP-AES	0.5	n.d	n. d	n. d		
Lead (Pb)	mg/kg	USEPA 3050B, ICP-AES	5	n. d	650	n. d		
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	0.5	n. d	n. d	n. d		
Hexavalent Chromium (Cr VI	mg/kg	USEPA 3060A, UV-vis	0.16	n. d	n, d	n. d		

Test Item	Unit Test Method		D.I	Result		
rest item	1. 3881	16st Method	. Historia	(6)	(7)	
Cadmium (Cd)	mg/kg	USEPA 3050B, ICP-AES	0.5	n.d	n. d	
Lead (Pb)	mg/kg	USEPA 3050B, ICP-AES	5	n.d	13	
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	0.5	n.d	n. d	
Hexavalent Chromium (Cr VI)	mg kg	USEPA 3060A, UV-vis	0.16	n.d	n. d	

Note (1) n. d. = Not detected

(2) D. L = Detection Limit

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Test Report

No. F690101/LF-CTS027570

Date: December 20, 2004

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Heavy Metal

	***		25.7	Result				
Test Item	Unit	Test Method	D.I	(8)	(9)	(10)		
Cadmium (Cd)	mş kg	EN1122, ICP-AES	0.5	n. d	n. d	n. d		
Lead (Pb)	mg kg	USEPA 3050B, ICP-AES	5	n. đ	n. d	n. d		
Mercury (Hg)	mg kg	USEIW 2052, ICP-AES	0.5	n. d	n. d	n. d		
Hexavalent Chromium (Cr VI	mg kg	USEPA 3060A, UV-vis	0.16	n. d	n. d	n. d		

	***		n r	Result		
Test Item	Unit	Test Method	D.L	(11)	(12)	
Cadmium (Cd)	mg/kg	EN1122, ICP-AES	0.5	n.d	n. d	
Lead (Pb)	mg/kg	USEPA 3050B, ICP-AES	5	n.d	n.d.	
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	0.5	n.d	n. d	
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-vis	0.16	n.d	n. d	

Test Item				Result
	Unit	Test Method	D.I	(13)
Cadmium (Cd)	mg/kg	USEPA 3050B, ICP-AES	0.5	n. d
Lead (Pb)	me/kg	USEPA 3050B, ICP-AES	5	n. d
Mercury (Hg)	mg ka	USEPA 3052, ICP-AES	0.5	19
Hexavalent Chromium (C	'r VI) mg/kg	USEPA 3060A, UV-vis	0.16	n. d

Note

(1) n. d. = Not detected

(2) D. L = Detection Limit

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Test Report Date: December 20, 2004 Page 5 of 8 No. F690101/LF-CTS027570

Flame Retardants

			10.1	Results			
Items	Unit Test Method		L.I.d	(2)	(3)	(4)	
Polybrominated Biphenyls (PBBs)	-	•	_	•	-	•	
Bromobiphenyl	mgˈkg		5	n. d.	n. d.	n. d.	
Dibromobiphenyl	mg′kg	With reference to 83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.	
Tribromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	
Tetrabromobiphenyl	աջ∖եք		5	n. d.	n. d.	n. d.	
Pentabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	
Hexabromobiphenyl	mg/kg	Analysis was performed by GCMS.	5	n. d.	n. d.	n. d.	
Heptahromobiphenyl	mg/kg	GLMS.	5	n. d.	n. d.	n. d.	
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	
Decabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	
Polybrominated Diphenyl Ethers (PBDEs)	-	-	-	-	•	-	
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	
Dibromodiphenyl ether	mş⁄kg		5	n. d.	n. d.	n. d.	
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	
Tetrabromodiphenyl ether	mş′kg	With reference to	5	n. d.	n. d.	n. d.	
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.	
Hexabromodiphenyl ether	աթեբ	Analysis was performed by	5	n. d.	n. d.	n. d.	
Heptabromodiphenyl ether	mg/kg	GCMS.	5	n. d.	n. d.	n. d.	
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	
Decabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	

Note

- (1) n. d. = Not detected (2) D. L. = Detection Limit

SGS Testing Korea Co., Ltd. #18-34, Sanbor-dong, Gunpo-etty, Kyunggi-do, Korea 435-840 Tel: 031) 428-5765-6, Fax: 031) 427-2374, Inter Neb-http://www.sgslab.co.kr

Test Report

No. F690101/LF-CTS027570 Date: December 20, 2004

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Flame Retardants

	· · · · · · · · · · · · · · · · · · ·		15. 1	Results		
Items	Unit	Test Method	D.L.	(5)	(6)	(8)
Polybrominated Biphenyls (PBBs)	-	-	-	-	-	-
Bromohiphenyl	աթեք		5	n. d.	n. d.	n. d.
Dibromohiphenyl	աթ եք		5	n. d.	n. d.	n. d.
Tribromobiphenyl	mg/kg	With reference to	5	n. d.	n. d.	n. d.
Tetrahromobiphenyl	mg/kg	83/264/EEC and	5	n. d.	n. d.	n. d.
Pentabromobiphenyl	mg/kg	2003/11/FEC.	5	n. d.	n. d.	n. d.
Hexabromohiphenyl	mg⁄kg	g 2003/11/EEC. g Analysis was performed by GC/MS.		n. d.	n. d.	n. d.
Heptabromobiphenyl	m⊵′kg			n. d.	m. d.	n. d.
Octabromobiphenyl	m⊊′kը		5	n. d.	m. d.	n. d.
Decahromobiphenyl	mgˈkg		5	n. d.	n. d.	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	-	-	-		-	-
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Dibromodiphenyl ether	mg/kg	E C	5	n. d.	n. d.	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.	m. d.	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	m. d.	n. d.
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.
Hexabromodiphenyl ether	m⊛'kբ	Analysis was performed by	5	n. d.	n. d.	n. d.
Heptabromodiphenyl ether	mg/kg	GCMS.	5	n. d.	n. d.	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Decahromodiphenyl ether	mg′kg		5	n. d.	n. d.	n. d.

Note

(1) n. d. = Not detected

2 D. L = Detection Limit

SGS Testing Korea Co., Ltd. #18-34, Banbon-dong, Bunpo-city, Kyunggi-do, Korea 435-040 Tel : 031) 428-5765-6, Fox: 031) 427-2374, InterNet>http://www.sgslab.co.kr

Test Report No. F690101/LF-CTS027570 Date: December 20, 2004 Page 7 of 8

Flame Retardants

*-	Unit Test Method		D.L.	Results		
Items				(9)	(10)	(11)
Polybrominated Biphenyls (PBBs)	-	-	-		-	-
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.
Dibromohiphenyl	աց∕եբ		5	n. d.	n. d.	n. d.
Tribromobiphenyl	m <u>o</u> ′kg	With reference to	5	n. d.	n. d.	n. d.
Tetrabromobiphenyl	me′kg	83/264/EEC and	5	n. d.	n. d.	n. d.
Pentabromobiphenyl	mg kg	2003/11/EEC.	5	n. d.	n. d.	n. d.
Hexabromobiphenyl	mg/kg	Analysis was performed by	5	n. d.	n. d.	n. d.
Heptabromobiphenyl	ա⊜′kք	GCMS.	5	n. d.	n. d.	n. d.
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.
Decahromobiphenyl	mg′kg		5	n. d.	n. d.	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	-	•	-	-	-	-
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Dibromodiphenyl ether	m⊊′kը		5	n. d.	n. d.	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Tetrahromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.
Pentabromodiphenyl ether	mg/kp	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.
Hexabromodiphenyl ether	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.
Heptahtomodiphenyl ether	mg kg		5	n. d.	n. d.	n. d.
Octabromodiphenyl ether	mg kp		5	n. d.	n. d.	n. d.
Nonahromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.
Decahromodiphenyl ether	mo ke		5	n. d.	n. d.	n. d.

Note

- (1) n. d = Not detected
- [2] D. L = Detection Limit

SGS Testing Korea Co., Ltd. #18-34, Banbon-dong, Gunpo-city, Kyunggi-do, Korea 435-640 Tel : 031) 428-5765-6, Fax: 031) 427-2374, InterNeb-http://www.sgslab.co.kt

Test Report Page 8 of 8 No. F690101/LF-CTS027570 Date: December 20, 2004

Flame Retardants

				Results
Items	Items Unit Test Method		D.I	(12)
Polybrominated Biphenyls (PBBs)		•	-	No.
Bromobiphenyl	mg/kg		5	п. Л.
Dibramobiphenyl	mp/kg		xel.	n. il.
Tribromobiphenyl	mp/kg			п. і.
Tetrabromobiphenyl	mg/kg	With reference to 83/264/EEC	5	п. й.
Pentabromobiphenyl	me ke	Analysis was performed by	5	n. il.
Hexabromobiphenyl	mg/kg	GCMS.	5	n. d.
Heptabromobiphenyl	mg/kg		5	n. il.
Octabromobiphenyl	mg/kg		5	n. d.
Decabromobiphenyl	mg/kg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	-	-	-	
Bromodiphenyl ether	mg/kg		5	n. d.
Dibramodiphenyl ether	mg/kg		*	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to \$5264 EEC	5	n. d.
Pentahromodiphenyl ether	me ke	and 2003/11/EEC.	5	n. il.
Hexabromodiphenyl ether	mg/kg	Analysis was performed by GC/MS.		n. d.
Heptabromodiphenyl ether	mg/kg		3	n. d.
Octabromodiphenyl ether	mg/kg		*	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.
Decabromodiphenyl ether	mg/kg		5	n. d.

Note	(1) n. d = Not detected (2) D. L = Detection Limit		
*****		End	**************

SGS Testing Korea Co., Ltd.

#1002-2, Hwasan-rt, Orsan-ub, Ulju-gun, Ulsan, Korea 689-890 Tel : 052)239-6908-10, Fix: 052)239-6913, InterNeb-http://www.sgskib.co.kr

Test Report No. FB

No. F690101/LF-CTS019486

Date: November 4, 2004

Page 1 of 2

LG PHILIPS LCD.

642-3, Jinpyung-dong, Kumi-city,

Kyungbuk, Korea

The following merchandise was submitted and identified by the client as: -

Type of Product

: Lamp Holder

SGS File No.

P-48/2004-1005/4/D

Sample receiving date

Oct. 22, 2004

Test performing date

Oct. 25, 2004

Test Performal

SGS Testing Koren tested the sample which was selected by applicant with

following result.

Test results

: For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

Thomas Hwang / Lab. Manager

SBP/mss

SGS Testing Korea Co., Ltd. #1 002-2, Hwasan-ti, Orsan-ub, Uju-gun, Ulsan, Korea 689-890 Tel : 052)239-6008-10, Fax: 052)239-6013, InterNeb-http://www.sgslab.co.kr

Test Report

No. F690101/LF-CTS019486

Date: November 4, 2004

Page 2 of 2

Heavy Metal Test

Items	Linit	Test Method	D.L.	Results
Cadmium (Cd)	mg/kg	USEPA 3052, ICP-AES	1	n. d.
Lead (Pb)	mg/kg	USEPA 3052 ICP-AES	10	n.d.
Mercury (Hg)	mg/kg	USEPA 30Ω, ICP-AES	2	n. d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA JUGOA, UV-Viz	0.16	n.d.

Flame Retardants

Items	Unit	Test Method	D.L.	Results
Polybrominated Biphemyls (PBBs)	*	••	**	ţw.
Bromobiphenyl	mg/kg		5	n. d.
Dibromobiphenyl	mg/kg		5	n. d.
Tribromobiphenyl	me ka		5	п. д.
Tetrabromobiphenyl	mg kg	With reference to 83/264/EEC	5	n. d.
Pentahromobiphenyl	mg/kg	and 2003/11/EEC. Analysis was performed by	5	n. d.
Hexabromobiphenyl	mg/kg	GC/MS.	5	n. d.
Heptabromobiphenyl	mg kg		5	n. d.
Octabromobiphenyl	mg/kg		5	n. d.
Decabromobiphenyl	mg ⁿ kg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	NW.	-		an.
Bromodiphenyl ether	mgʻkg		5	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.
Tribromodiphenyl ether	mg kg		5	n, d.
Tetrabromodiphenyl ether	mg/kg	With reference to 83/264/FFC	5	n. d.
Pentabromodiphenyl ether	mg/kg	and 2003/11/EEC.	5	n. d.
Hexabromodiphenyl ether	mgˈkg	Analysis was performed by GC/MS.	5	n. d.
Heptabromodiphenyl ether	mg/kg		5	n. il.
Octabromodiphenyl ether	mg kg		5	n. d.
Nonabromodiphenyl ether	mg ka		5	n. d.
Decabromodiphenyl ether	mg/kg		5	n. il.

Note	(1) n. d. = Not detected (2) D. L. = Detection Limit		
*****	• • • • • • • • • • • • • • • • • • • •	End	**************

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Test Report

No. F690101/LF-CTS019485

Date: November 4, 2004

Page 1 of 2

LG PHILIPS LCD.

642-3, Jinpyung-dong, Kumi-city,

Kyungbuk, Korea

The following merchandise was submitted and identified by the client as : -

Type of Product

: Lamp Ring

SGS File No.

P-48/2004-1005/4/C

Sample receiving date

Oct. 22, 2004

Test performing date

Oct. 25, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results

For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

Thomas Hwang / Lab. Manager

SBP/mss

SGS Testing Korea Co., Ltd. #1002-2, Hwasan-t, Orean-ub, Ulju-gun, Ulsan, Korea 689-890

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Test Report No. F690101/LF-CTS019485 Date: November 4, 2004 Page 2 of 2

Heavy Metal Test

Items	T in It	Test Method	D.I.	Results
Cudmium (Cd)	mgkg	USEPA 3052, ICP-AFS	1.	n.d.
Lead (Pb)	mg/kg	USEPA 3052 ICP-AES	10	n. d.
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	2	n.d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA HOGOA, UV-Vis	0.16	n.d.

Flame Retardants

Items	Unit	Test Method	D.L.	Results
Polybrominated Biphenyls (PBBs)	.w	4%	SHC	***
Bromobiphenyl	mg/kg		5	n. d.
Dibramobiphenyl	mg/kg		5	n. d.
Tribromobiphenyl	me ka		5	n. d.
Tetrabromobiphenyl	mg/kg	With reference to 83/264/EEC	5	n. il.
Pentihromobiphenyl	mg kg	and 2003/11/EEC. Analysis was performed by	5	п. а.
Hexabromobiphenyl	mg/kg	GC/MS.	5	n. d.
Heptabromobiphenyl	mg kg		5	n. d.
Octabromohiphenyl	mg/kg		5	n, d.
Decabromobiphenyl	mgʻkg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	-	w.	-	-
Bromodiphenyl ether	mg/kg		5	n. d.
Dibramodiphenyl ether	mg/kg		5	n. d.
Tribromodiphenyl ether	me/kg		5	n. d.
Tetrabromodiphenyl ether	mg kg	With reference to 83/264/EEC	5	n. d.
Pentahromodiphenyl ether	mg/kg	and 2003/11/EEC.	5	n, d.
Hexabromodiphenyl ether	mg kg	Analysis was performed by GC/MS.	5	n. d.
Heptabromodiphenyl ether	me ke		5	n. d.
Octabromodiphenyl ether	mg kg		5	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.
Decabromodiphenyl ether	mg kg		5	n. d.

Note	(1) n. d. = Not detected (2) D. L. = Detection Limit		
******	*******	End	******

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Test Report No. F690101/LF-CTS019489 Date: November 4, 2004 Page 1 of 2

LG PHILIPS LCD.

642-3, Jinpyung-dong, Kumi-city,

Kyungbuk, Korea

SBP/mss

The following merchandise was submitted and identified by the client as : -

Type of Product : Metal Tape

SGS Pile No. : P-48/2004-1005/4/G

Sample receiving date : Oct. 22, 2004

Test performing date : Oct. 25, 2004

Test Performed : SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results : For further details, please refer to following page.

SGS Testing Koren Co., Ltd.

Thomas Hwang / Lab. Manager

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Test Report No. F690101/LF-CTS019489 Date: November 4, 2004 Page 2 of 2

Heavy Metal Test

Itens	Unit	Test Method	D.L.	Results
Cudmium (Cd)	mg/kg	USEPA 3032, ICP-AES	I.	n. d.
Lead (Pb)	mg/kg	USEPA 3052 ICP-AES	10	n. d.
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	2	n, d.
Hexavalent Chromium (Cr VI)	merke	USEPA 3060A, UV-Vis	0.16	n.d.

Flame Retardants

Items	Unit	Test Method	D.L.	Results
Polybrominated Biphenyls (PBBs)	400	•	**	iller
Bromobiphenyl	mg/kg		5	n. d.
Dibramobiphenyl	mg/kg		5	n. d.
Tribromobiphenyl	mg/kg		5	n. d.
Tetrabromobiphenyl	mg/kg	With reference to 83/254/EEC	5	n. d.
Pentabromobiphenyl	mg/kg	and 2003/11/EEC. Analysis was performed by	5	n. d.
Hexabromobiphenyl	mg/kg	GCMs.	5	n. d.
Heptabromobiphenyl	mg kg		5	n. d.
Octabromobiphenyl	mg/kg		5	n. d.
Decabromobiphenyl	mg/kg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	**	,,	7964	-
Bromodiphenyl ether	mg/kg		3	n. d.
Dibromodiphenyl ether	mg kg		5	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.
Tetrabromodiphenyl ether	mg kg	With reference to 83/264/EEC	5	n. d.
Pentabromodiphenyl ether	mg kg	and 2003/11/EEC.	5	n. d.
Hezabromodiphenyl ether	mg kg	Analysis was performed by GC/MS.	5	n. d.
Heptabromodiphenyl ether	mg/kg		3	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.
Nonabromodiphenyl ether	mp kg		5	n. d.
Decabromodiphenyl ether	mg/kg		5	n. d.

Note	(1) n. d. = Not detected (2) D. L. = Detection Limit		
****	********	End	******

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Test Report

No. F690101/LF-CTS019481

Date: November 4, 2004

Page 1 of 2

LG PHILIPS LCD. 642-3, Jinpyung-dong, Kumi-city, Kyungbuk, Korea

The following merchandise was submitted and identified by the client as : -

Type of Product

Screw

SGS File No.

P-48/2004-1005/4/A

Sample receiving date

Oct. 22, 2004

Test performing date

Oct. 25, 2004

Test Performed

SGS Testing Koren tested the sample which was selected by applicant with

following result.

Test results.

SBP/mss

For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

Thomas Hwang / Lab. Manager

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Test Report No. F690101/LF-CTS019481 Page 2 of 2 Date: November 4, 2004

Henvy Metal

Test Item	Unit	Test Method	Detection Limit	Result
Cadmium (Cd)	mg/kg	USEPA 3052, ICP-AES	1	n. d.
Lead (Pb)	mg/kg	USEPA 3052, ICP-AES	10	53
Mercury (Hg)	mg/kg	USEPA 3052, ICP-AES	2	n. d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	0.18

Note: n. d. = Not detected ************* END ****************************

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Test Report No. F690101/LF-CTS019490

Date: November 10, 2004

Page 1 of 2

LG PHILIPS LCD. 642-3, Jinpyung-dong, Kumi-city, Kyungbuk, Korea

The following merchandise was submitted and identified by the client as :-

Type of Product

Sheet Fix Tape (Nitto)

SGS File No.

P-48/2004-1005/4/H/a

Sample receiving date

Oct. 22, 2004

Test performing date

Oct. 25, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results.

For further details, please refer to following page.

SGS Testing Koren Co., Ltd.

SBP/mss

Thomas Hwang / Lab. Manager

SGS Testing Korea Co., Ltd. #1002-2, Hwasan-ti, Onsan-ub, Ulju-gun, Ulsan, Korea 689-890 Tal : 052/239-6908-10, Fax: 052/239-6913, InterNetWritip://www.sgstab.co.kr

Test Report No. F690101/LF-CTS019490 Date: November 10, 2004 Page 2 of 2

Henvy Metal Test

lieus	Unit	Test Method	D.L.	Results
Cadmium (Cd)	merke	USEPA 3052, ICP-AES	1	n. d.
Lead (Pb)	mg/kg	USEPA 305Ω, ICP-AES	10	n d.
Mercury (Hg)	ma/ka	USEPA 305∑, ICP-AES	2	n. d.
Hexayaleni Chromium (Cr VI)	mu/kg	USEPA JOSOA, UV-VIS	0.16	n. d.

Flame Retardants

Ilens	Duft	Test Method	DAL	Results
Polybrominated Biphenyls (PBBs)	***	m/y	<u>~</u>	Shin.
Bromobiphenyl	mgika		5	n. d.
Dibromobiphenyl	mg/tg		5	n. d.
Tribromobiphenyl	mg/kg		5	n. d.
Tetrabromobiphenyl	me ka	With reference to 83/264/EEC	5	n.d.
Pentabromobiphenyl	mgikg	and 2003/11/EEC. Analysis was performed by	5	n. d.
Hexabromobiphenyl	me/kg	GCMS.	5	n. d.
Heptabromobiphenyl	mg/kg		3	n. d.
Octabromobtphenyl	me/kg		5	n. d.
Decabromobiphenyi	mesta		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)			••	Mir.
Bromodiphenyl ether	me ka		5	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.
Tetrabromodiphenyl ether	merks	With reference to 83/264/EEC	5	n. d.
Peniabromodiphenyl ether	mesta	and 2003/11/EEC.	5	n. d.
Hexabromodiphenyl eiher	mg/kg	Analysis was performed by	.5	n. d.
Heptabromodiphenyl ether	mg/ka	GC/MS.	5	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.
Namibromodiphenyl ether	melka		5	n. d.
Decabromodiphenyl ether	maka		5	n. d.

Note	(1) n. d. = Not detected (2) D. L. = Detection Limit		
*****	*************	End	************

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Test Report

No. F690101/LF-CTS019491

Date: November 10, 2004

Page 1 of 2

LG PHILIPS LCD.

642-3, Jinpyung-dong, Kumi-city,

Kyungbuk, Korea

The following merchandise was submitted and identified by the client as: -

Type of Product

: Sheet Fix Tape (Taesung)

SGS File No.

P-48/2004-1005/4/H/b

Sample receiving date

Nov. 03, 2004

Test performing date

New, 04, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results

For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

SBP/mss

Thomas Hwang / Lab. Manager

SGS Testing Korea Co., Ltd. #1002-2, Hwasan-ri, Orsan-ub, Uju-gun, Usan, Korea 689-890 Tel: 052)299-6908-10, Fax: 052)299-6913, InterNeb-http://www.sgslab.co.kr

Test Report No. F690101/LF-CTS019491 Date: November 10, 2004 Page 2 of 2

Heavy Metal Test

Henrs	Unit	Test Method	D.L.	Results
Cadmium (Cd)	mgAkg	USEPA 3052, ICP-AES	ı	n. d.
Lead (Pb)	mg/kg	USEPA 1052, ICP-AES	10	n.d.
Menury (Hg)	malkg	USEPA 3052, ICP-AES	2	n. d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.

Flame Retardants

Items	Unit	Test Method	D.L.	Results
Polybrominated Biphemyls (PBBs)	and.	46		-
Bromobiphenyl	mg/kg		5	n. d.
Dibramobiphenyl	mg/kg		5	n. d.
Tribromobiphenyl	mg/kg		5	n. il.
Tetrabromobiphenyl	mg/kg	With reference to 83/264/EEC	5	n. d.
Pentahromobiphenyl	mg/kg	and 2003/11/EEC. Analysis was performed by	5	n. d.
Hexabromobiphenyl	mg/kg	GC/MS.	5	n. d.
Heptabromobiphenyl	mg/kg		5	n. d.
Octabromobiphenyl	mg/kg		5	n. il.
Decabromobiphenyl	mg/kg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	-	-	=	-
Bromodiphenyl ether	mg/kg		5	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to 83/264/EEC	5	n, d.
Pentabromodiphenyl ether	mg/kg	and 2003/11/EEC.	5	n. d.
Hexabromodiphenyl ether	me ke	Analysis was performed by GC/MS.	5	n. d.
Heptabromodiphenyl ether	mg/kg		5	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.
Decabromodiphenyl ether	mg/kg		5	n. d.

Note	(1) n. d. = Not detected (2) D. L. = Detection Limit		
*****	******	End	************

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#1 002-2, Hwasan-ri, Onsan-ub, Ulju-gun, Ulsan, Korea 689-890 Tal : 052)239-6908-10, Fax: 052)239-6913, InterNet-http://www.sgslab.co.kr

Test Report

No. F690101/LF-CTS019488

Date: November 4, 2004

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LG PHILIPS LCD.

642-3, Jinpyung-dong, Kumi-city,

Kyungbuk, Korea

The following merchandise was submitted and identified by the client as : -

Type of Product

Tape

SGS File No.

P-48/2004-1005/4/F

Sample receiving date

Oct. 22, 2004

Test performing date

Oct. 25, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results

For further details, please refer to following page.

SGS Testing Koren Co., Ltd.

SBP/mss

Thomas Hwang / Lab. Manager

SGS Testing Korea Co., Ltd. #1 002-2, Hwasan-t, Orsan-ub, Uju-gun, Usan, Korea 689-890 Tal: 052)239-6908-10, Fax: 052)239-6913, InterNeb-http://www.sgslab.co.kr

Test Report No. F690101/LF-CTS019488 Date: November 4, 2004 Page 2 of 2

Heavy Metal Test

Items	Unit	Test Method	D.L.	Results
Cadmium (Cd)	mg/kg	LISEPA 3052, ICP-AES	ı	n.d.
Lead (Pb)	mg/kg	USEPA 3052, ICP-AES	10	n. d.
Menury (Hg)	mg/kg	USEPA 3052, ICP-AES	2	n.d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.

Flame Retardants

Items	Unit	Test Mothod	D.L.	Results
Polybrominated Biphenyls (PBBs)	XM	•	X44	·
Bromobiphenyl	mg/kg		5	n. d.
Dibramobiphenyl	mg kg		5	n. d.
Tribromobiphenyl	mg/kg		5	n. d.
Tetrabromobiphenyl	mg kg	With reference to 83/264/EEC	5	n. d.
Pentahromobiphenyl	mg/kg	and 2003/11/EEC. Analysis was performed by	5	n. d.
Hexabromobiphenyl	mg/kg	GCMS.	5	n. d.
Heptabromobiphenyl	mg/kg		5	n. d.
Octabromobiphenyl	mg/kg		5	n. d.
Decabromobiphenyl	mg/kg		5	n. d.
Polybrominated Diphenyl Ethers (PBDEs)		-	-	
Bromodiphenyl ether	mg/kg		5	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to 83/264/EEC	5	n. il.
Pentahromodiphenyl ether	mg kg	and 2003/11/EEC.	5	n. d.
Hexabromodiphenyl ether	mg/kg	Analysis was performed by GC/MS.	5	n. d.
Heptabromodiphenyl ether	mg/kg		ast.	n. d.
Octabromodiphenyl ether	mg kg		5	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.
Decabromodiphenyl ether	mg kg		5	n. d.

Note (1) n. d = Not detected (2) D. L. = Detection Limit		
***********	End	*******

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Test Report

No. F690101/LF-CTS038000

Date: December 10, 2004

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LG PHILIPS LCD. 642-3, Jinpyung-dong, Kumi-city, Kyungbuk, Korea

The following merchandise was submitted and identified by the client as : -

Type of Product

Twenty nine samples of Wire ASSY

(Forfuntherdetails, please see attached.)

SGS File No.

K-48/2004-0003/5

Sample receiving date

Dec. 01, 2004

Test performing date

Dec. 02, 2004

Test Performed

SGS Testing Korea tested the sample which was selected by applicant with

following result.

Test results

For further details, please refer to following page.

SGS Testing Korea Co., Ltd.

Thomas Hwang / Lab. Manager

SBP/mss

SGS Testing Korea Co., Ltd. #1002-2, Hwasan-ti, Orean-ub, Uju-gun, Ulsan, Korea 689-890 Tel: 052)239-6008-10, Fex: 052)239-6013, InterNeb-http://www.sgslab.co.kr

Test Report No. F690101/LF-CTS038000 Date: December 10, 2004 Page 2 of 11

LP150E06

Wire Yellow LGC /Core LGC, Wire Pink Sumitomo/ Core Sumitomo Connector Small, Shrinkage Tube

NO	ITEM NAME
*	SHIRINKAGE TUBE/LG7Ø
2	WIRE WHITE SMALLAG
3	COBALT SMALL/LG
4	BLACK SMALL/LG
5	YELLOW SMALL/LG
6	CORE/LG
7	YELLOW WHITE SMALL/SUMITOMO
8	WHITE SMALL/SMITOMO
9	PINK SMALL/SUMITOMO
10	BLUE BIG/SUMITOMO
11	GRAY BIG/SUMITOMO
12	PINK BIG/SUMITOMO
13	WHITE BIG/SUMITOMO
14	CORE/SUMITOMO
15	PINK BIG/NISSEI
16	WHITE BIG/NISSE1
17	CORE/NISSEI
18	CONNECTOR BIG
19	CONNECTOR SMALL
20	PINK BIG/KURABE
21	BLUE BIG/NISSEI
22	Blue Big/Kurabe
23	BLACK SMALL/SUMITOMO
24	COBALT SMALL/SUMITOMO
25	GRAY BIG/KURABE
26	WHITE BIG/KURABE
27	GREEN SMALL/LGC
28	YELLOW SMALL/SUMITOMO
29	SHRINKAGE TUBE

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Heavy Metal Test

lterns	11		D.L.	Results				
noms	Unit			(1)	(2)	(3)	(4)	
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n. d.	n.d.	n. d.	n. d.	
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	n. d.	16	n. d.	13	
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n.d.	n.d.	n. d.	n. d	
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.	n.d.	n. d.	n. d	

lterns	II mis	Unit Test Method	D.L.	Results				
Itwills	Unit	lest metitod	LJ.L.	(5)	(6)	(7)	(8)	
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n.d.	n.d.	n. d.	n. d	
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	50	55	49	33	
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n.d.	n.d.	n. d.	n. d	
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n.d.	n.d.	n. d.	n. d.	

lterns	11-4	Unit Test Method	D.L.	Results				
IQIIIS	Unit	lest method	U.L.	(9)	(10)	(11)	(12)	
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n.d.	n.d.	n. d.	n. d.	
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	57	n.d.	n. d.	n. d.	
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n.d.	n. d.	n. d.	n. d	
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3080A, UV-Vis	0.16	n.d.	n. d.	n. d.	n. d.	

lterns	Unit Test Method	D.L.	Results				
		LJ.L.	(13)	(14)	(15)	(16)	
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n. d.	n.d.	n. d.	n.d.
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	53	15	n. d.	n. cl
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n.d.	n.d.	n. d.	n. d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n.d.	n.d.	n. d.	n. d

Note

(1) n. d. = Not detected (2) D. L. = Detection Limit

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Heavy Metal Test

	Unit Test Method	D.L.	Results				
lterns .	Unit	iesi melinod	LJ.L.	(17)	(18)	(19)	(20)
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n. d.	n. d.	n. d.	n.d.
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	12	n. d.	n. d.	n. d
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n. d.	n. d.	n. d.	n. d
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.	n.d.	n. d.	n. cL

1	11	Unit Test Method	D.L.	Results				
items	Unit	lest method	LJ.L.	(21)	(22)	(23)	(24)	
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n. d.	n.d.	n. d.	n. d.	
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	n.d.	n.d.	46	33	
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n.d.	n. d.	n. d.	n. d.	
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.	n.d.	n. d.	n.d.	

Items	Unit Test Method	D.L.	Results			
itorns	Unit	iest metrica	L.J. L.,	(25)	(26)	(27)
Cadmium (Cd)	mg/kg	USEPA3062, ICP-AES	1	n. d.	n. d.	n. d.
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	n. d.	n. d.	14
Mercury (Hg)	mg/kg	USEPA3062, ICP-AES	2	n. d.	n. d.	n. d.
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.	n. d.	n.d.

L	Unit	To a Milestonia de la Francia		The Marie I Par		Ros	ults
items	Unit	Test Method	D.L.	(28)	(29)		
Cadmium (Cd)	mg/kg	USEPA 3062, ICP-AES	1	n. d.	n. d.		
Lead (Pb)	mg/kg	USEPA3062, ICP-AES	10	n. d.	n. d.		
Mercury (Hg)	mg/kg	USEPA 3062, ICP-AES	2	n. d.	n. d.		
Hexavalent Chromium (Cr VI)	mg/kg	USEPA 3060A, UV-Vis	0.16	n. d.	n. d.		

Note

(1) n. d. = Not detected

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Flame Retardants

Itoms	Unit	Test Method	D.L.	Rosults					
items	Unit	rest matriou		(1)	(2)	(3)	(4)		
Polybrominated Biphenyls (PBBs)	ī	*	940	*	Sair	*	**		
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Dibromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n.d.		
Tribromobiphenyl	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.		
Tetrabromobiphenyl	mg/kg	83/264/EEC and	5	n. d.	n. d.	n. d.	n. d.		
Pentabromobiphenyl	mg/kg	2003V11/EEC.	5	n. d.	n. d.	n. d.	n. d.		
Hexabromobiphenyl	mg/kg	Analysis was performed by GC/MS	5	n. d.	n. d.	n. d.	n. d.		
Heptabromobiphenyl	mg/kg	оста.	5	n. d.	n. d.	n. d.	n. d.		
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Decabromobipheryl	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Polybrominated Diphenyl Ethers (PBDEs)	-	~	4	=	-	1	*		
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Dibromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n.d.		
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.		
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.		
Hexabromodiphenyl ether	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.		
Heptabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n.d.		
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Decabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		

Note

(1) n. d. = Not detected

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Flame Retardants

items	Unit	Test Method	D.L.	Results						
Itans	UIIIL	IVS MAILUU	W.L.	(5)	(7)	(8)	(9)			
Polybrominated Biphenyls (PBBs)		584	w	***	**	***	**			
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n.d.			
Dibromobiphenyl	mg/kg		55	n. d.	n. d.	n. d.	n. d.			
Tribromobipherryl	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.			
Tetrabromobiphenyl	mgÆg	83/264/EEC and	5	n. d.	n. d.	n. d.	n. d.			
Pentabromobiphenyl	mg/kg	2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.			
Hexabromobipheryl	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.			
Heptabromobiphenyl	mg/kg	was mo.	5	n. d.	n. d.	n. d.	n. d.			
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Decabromobipheryl	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Polybrominated Diphenyl Ethers (PBDEs)	-		4	_	-		-			
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Dibromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.			
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.			
Hexabromodiphenyl ether	mg/kg	Analysis was performed by	5	n. d.	n. d.	n. d.	n. d.			
Heptabromodiphenyl ether	mgÆg	GC/MS.	5	n. d.	n. d.	n. d.	n. d.			
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.			
Decabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n.d.			

Note

(1) n. d. = Not detected

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Flame Retardants

Itoms	Herit	nit Test Method		D.L. Results					
Itanis	OHIL			(10)	(11)	(12)	(13)		
Polybrominated Biphenyls (PBBs)		40	200	See:	**	**	~		
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Dibromobiphenyl	mgÆg		5	n. d.	n. d.	n. d.	n. d.		
Tribromobipherryl	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.		
Tetrabromobiphenyl	mg/kg	83/264/EEC and	5	n. d.	n. d.	n. d.	n. d.		
Pentabromobiphenyl	mgÆg	2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.		
Hexabromobipheryl	mgÆg	Analysis was performed by GC/MS	5	n. d.	n. d.	n, d.	n. d.		
Heptabromobiphenyl	mg/kg	CXXMO.	5	n. d.	n. d.	n. d.	n. d.		
Octabromobiphenyl	mg/kg	i -	5	n. d.	n. d.	n. d.	n. d.		
Decabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Polybrominated Diphenyl Ethers (PBDEs)	**	*	**	-			-		
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Dibromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.		
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.		
Hexabromodiphenyl ether	mg/kg	Analysis was performed by	5	n. d.	n. d.	n. d.	n. d.		
Heptabromodiphenyl ether	mg/kg	GC/MS.	5	n. d.	n. d.	n. d.	n. d.		
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		
Decabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.		

Note

(1) n. d. = Not detected (2) D. L = Detection Limit

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Flame Retardants

Items	Unit	Test Method	D.L.		Ros		
items	Offic	rest matrod		(15)	(16)	(18)	(19)
Polybrominated Biphonyls (PBBs)	244	46			*		,
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Dibromobiphenyl	mgÆkg		5	n. d.	n. d.	n. d.	n. d.
Tribromobipherryl	mgÆg	With reference to	5	n. d.	n. d.	n. d.	n. d.
Tetrabromobiphenyl	mg/kg	83/2/64/EEC and	5	n. d.	n. d.	n. d.	n. d.
Pentabromobiphenyl	mgÆg	2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.
Hexabromobipheryl	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.
Heptabromobiphenyl	mg.kg	Sarah M.U.	5	n. d.	n. d.	n. d.	n.d.
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Decabromobipheryl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	Zaga.	•	-	_	-	-	~
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.
Pentabromodiphenyl ether	mgÆg	83/264/EEC and 2003/11/EEC. Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.
Hexabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Heptabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Decabromodiphenyl ether	mgÆg		5	n. d.	n. d.	n. d.	n. d.

Note

(1) n. d. = Not detected

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Flame Retardants

Itoms	Unit	Test Method			Res		
items	Offit			(20)	(21)	(22)	(23)
Polybrominated Biphenyls (PBBs)	366.	AN-	SHE	-	500	**	
Bromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Dibromobiphenyl	mgÆg		5	n. d.	n. d.	n. d.	n. d.
Tribromobiphenyl	mgÆg	With reference to	5	n. d.	n. d.	n. d.	n. d.
Tetrabromobiphenyl	mg.kg	83/264/EEC and	5	n. d.	n. d.	n. d.	n. d.
Pentabromobiphenyl	mgÆg	2003/11/EEC.	5	n. d.	n. d.	n. d.	n. d.
Hexabromobipheryl	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.
Heptabromobiphenyl	mg/kg	Salas Mas,	5	n. d.	n. d.	n. d.	n. d.
Octabromobiphenyl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Decabromobipheryl	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Polybrominated Diphenyl Ethers (PBDEs)	560	•		-		-	Sar
Bromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Dibromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Tribromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n. d.	n. d.	n. d.
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC. Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d.	n. d.
Hexabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Heptabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Octabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.
Decabromodiphenyl ether	mg/kg		5	n. d.	n. d.	n. d.	n. d.

Note

(1) n. d. = Not detected

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Flame Retardants

Itoms	Unit	Test Method	D.L.		Rosults	
IIAI II S	Othe	rest metrou	had a har a	(24)	(25)	(26)
Polybrominated Biphenyls (PBBs)	769		~	W0.	***	~
Bromobiphenyl	mg/kg		5	n.d.	n.d.	n. d.
Dibromobiphenyl	mg/kg		5	n. d.	n.d.	n.d.
Tribromobipheryl	mg/kg	With reference to	5	n. d.	n.d.	n.d.
Tetrabromobiphenyl	mgÆg	83/264/EEC and	5	n. d.	nd.	n.d.
Pentabromobiphenyl	mgÆg	2003/11/EEC.	5	n. d.	n.d.	n.d.
Hexabromobiphenyl	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n. d.	n. d
Heptabromobiphenyl	mg/kg	GAMB,	5	n. d.	n.d.	n.d.
Octabromobiphenyl	mg/kg		5	n. d.	n.d.	n.d.
Decabromobiphenyl	mg/kg		5	n. d.	n.d.	n.d.
Polybrominated Diphenyl Ethers (PBDEs)	-	•	-	***	*	700
Bromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.
Dibromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.
Tribromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n.d.	n.d.
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n.d.
Hexabromodiphenyl ether	mg/kg	Analysis was performed by GC/MS.	5	n. d.	n.d.	n. d.
Heptabromodiphenyl ether	mg/kg		5	n. d.	n.d.	n. d.
Octabromodiphenyl ether	mg/kg		5	n.d.	n.d.	n. d.
Nonabromodiphenyl ether	mg/kg		5	n. d.	n.d	n. d.
Decabromodiphenyl ether	mg/kg		5	n.d.	n.d.	n.d.

Note

(1) n. d. = Not detected

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Flame Retardants

l	Unit	Test Method	D.L.	Results				
Items	Unit	rea mellod		(27)	(28)	(29)		
Polybrominated Biphenyls (PBBs)	OM	M.	36c	. 24	4%	2007		
Bromobiphenyl	mgÆg		5	n. d.	n.d.	n. d.		
Dibromobiphenyl	mg/kg		5	n. d.	n.d.	n. d.		
Tribromobiphenyl	mg/kg	With reference to	5	n.d.	n.d.	n.d.		
Tetrabromobiphenyl	mg/kg	83/264/EEC and	5	n. d.	nd.	n.d.		
Pentabromobiphenyl	mg/kg	2003/11/EEC.	5	n. d.	n.d.	n. d.		
Hexabromobipheryl	mg.kg	Analysis was performed by GC/MS.	5	n. d.	n.d.	n. d.		
Heptabromobiphenyl	mg.kg	GG M3.	5	n.d.	n.d.	n.d.		
Octabromobiphenyl	mg/kg		5	n. d.	n.d.	n. d.		
Decabromobipheryl	mgÆg		5	n. d.	n.d.	n. d.		
Polybrominated Diphenyl Ethers (PBDEs)	-			-	-	**		
Bromodiphenyl ether	mg/kg	·	5	n.d.	n.d.	n.d.		
Dibromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.		
Tribromodiphenyl ether	mg/kg		5	n.d.	n.d.	n. d.		
Tetrabromodiphenyl ether	mg/kg	With reference to	5	n. d.	n.d.	n. d.		
Pentabromodiphenyl ether	mg/kg	83/264/EEC and 2003/11/EEC.	5	n. d.	n. d.	n. d.		
Hexabromodiphenyl ether	mg/kg	Analysis was performed by	5	n. d.	n.d.	n. d.		
Heptabromodiphenyl ether	mgÆg	GC/MS.	5	n. d.	n.d.	n. d.		
Octabromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.		
Nonabromodiphenyl ether	mg/kg		5	n. d.	n.d.	n. d.		
Decabromodiphenyl ether	mg/kg		5	n. d.	n.d.	n.d.		

Note	(1) n. d. = Not detected (2) D. L = Detection Limit		
******	*******************	End	************************************

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認可內容:

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